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light intensity decreased the thallus decreased in size, the air chambers decreased in number per unit area, and chloroplasts appeared in the dorsal epidermal cells. In the region of least light intensity and in dripping water a form was found which showed neither air chambers, ventral scales, nor tuberculate rhizoids. Miss MAYBROOK concludes that the factors responsible for this condition of the thallus are diminished light intensity and excessive moisture. Since none of these plants were in fruit the question of identity naturally is of prime importance. The long series of recently conducted experiments on undoubted *Fegatella conica* by BRYAN in this laboratory show that under extreme conditions of moisture the air chambers can be somewhat modified. BRYAN eliminated neither air chambers nor ventral scales. The reviewer considers the presence of air chambers and ventral scales of such importance in undoubted Marchantiales that he hopes Miss MAYBROOK will place some of the plants under suitable conditions for fruiting in order that there may be no doubt of their identity.—W. J. G. LAND.

Notes from Florida.—HARSHBERGER⁷ has written a popular sketch of his journey across the Everglades, promising later to give a detailed account of the plant formations studied. Attention is called to the great lack of scientific knowledge of this region. South Florida is regarded as that portion of the state south of 27°. Brief treatment is given the plant and animal life, agricultural possibilities, and other topics.

BESSEY⁸ has given a brief description of the hammocks, as they are seen about Miami, contrasting them with the pine lands and with the Everglades. Reference is made to a number of the more interesting species, and the cause of the sharp contrast between the vegetation of the pine lands and that of the hammocks is discussed.

In a steamboat ride up the Apalachicola River, R. M. HARPER⁹ noted a considerable change in the bank vegetation in the progress of the journey. Among the possible explanations suggested for this common phenomenon, the chief place is given to the probability that the upstream plants require or tolerate greater fluctuation in level than do the plants of the estuarine swamps, in which, of course, the seasonal changes in level are small.—H. C. COWLES.

An ecological study of weeds.—Weeds have been largely neglected by ecologists and phytogeographers, who for the most part have concerned themselves with the more primeval types of vegetation. For several years Miss BRENCHLEY has been making observations on the soil relations of weeds, and

⁷ HARSHBERGER, J. W., South Florida; a geographic reconnaissance. Bull. Geog. Soc. Phila. 10:37-47. figs. 10. 1912.

⁸ BESSEY, E. A., The hammocks and everglades of southern Florida. Plant World 14:268-276. figs. 2. 1911.

⁹ HARPER, R. M., The river-bank vegetation of the lower Apalachicola, and a new principle illustrated thereby. Torreya 11:225-234. fig. 1. 1911.

she has made three reports on her studies.¹⁰ The work has been carried on in Southern England, and careful effort was made to compare conditions in several different counties. It is concluded that some weeds are ubiquists, occurring on all soils, whereas other weeds are definitely symptomatic. Symptomatic species are most in evidence on chalk, although it is to be noted that most of the weeds which are calcifuges in Bedfordshire are calcicoles in Wiltshire and Somerset. Examples of such reversal are *Chenopodium album* and *Bartsia Odontites*; *Poa annua* is about the only consistent calcifuge observed. In one place a mingling of chalk plants and "acid plants" was explained by a non-calcareous surface soil overlying a chalk subsoil. In some cases the character of the crop influences the weed population, as in certain leguminous seed crops. Some plants, as the mayweeds (*Anthemis*, *Matricaria*), are impatient of competition.—H. C. COWLES.

Morphology of *Macroglossum*.—*Macroglossum* is a new generic type of the Marattiaceae described in 1909 by COPELAND from material obtained from Borneo. A recent visit to this region enabled CAMPBELL to secure material of this fern, and he has now published an account of its structure and affinities.¹¹ The genus now comprises two species, the second one having been found growing in the botanical gardens at Buitenzorg, but of unknown origin. The species studied is a large plant, the leaves reaching sometimes a length of 4 meters. It belongs to the *Angiopteris* group, related apparently most nearly to *Archangiopteris*. It differs much in general appearance from *Angiopteris*, as well as in its much elongated and partially immersed sori. The sporangia also are smaller and very much more numerous than those of *Angiopteris*. The gametophyte may reach a length of 3 cm., and branching is not uncommon. The antheridia occur on both surfaces, and the number of sperm mother cells is probably greater than in any other of the Marattiaceae. The embryo develops a conspicuous suspensor, as in *Danaea*. The author also describes certain anatomical details, comparing them with those of the other Marattiaceae.—J. M. C.

Leaf-sheath trichomes in grasses.—In many grasses, especially those of xerophytic and alpine habitats, the leaf sheaths do not decay immediately after death. Instead of this they remain, forming a sort of mantle about the young sheaths. That this feature is especially characteristic of xerophytic grasses was noted in 1890 by HACKEL, who regarded the mantles as having a protective function, tending to reduce transpiration. H. BROCKMANN-JEROSCH¹²

¹⁰ BRENCHLEY, WINIFRED E., The weeds of arable land in relation to the soils on which they grow. Ann. Botany 25:155-165. 1911; 26:95-109. 1912; 27:141-166. 1913.

¹¹ CAMPBELL, D. H., The structure and affinities of *Macroglossum Alidae* Cope-land. Ann. Botany 28:651-669. pls. 46-48. figs. 8. 1914.

¹² BROCKMANN-JEROSCH, H., Die Trichome der Blattscheiden bei Gräsern. Ber. Deutsch. Bot. Gesells. 31:590-594. pl. 1. 1914.